Natural language

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In the philosophy of language, a **natural language** (or **ordinary language**) is a language that is spoken, written, or signed (visually or tactilely) by humans for general-purpose communication, as distinguished from such constructs as computer-programming languages or the "languages" used in the study of formal logic, especially mathematical logic.

Natural language processing (NLP), which is computerised support for natural-language style input (as opposed to the highly artificial syntax normally seen in computer languages) is a major sub-field of artificial intelligence and linguistics. Natural language issues are particularly salient in the areas of text mining, search engines, automatic summarisation, information retrieval, speech synthesis, and algorithms employed to determine the content of text streams in computational linguistics (e.g. viterbi algorithm).

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Defining natural language

Though the exact definition is debatable, natural language is often contrasted with artificial or constructed languages such as Esperanto.

Linguists have an incomplete understanding of all aspects of the rules underlying natural languages, and they are therefore objects of study. The understanding of natural languages reveals much about not only how language works (in terms of syntax, semantics, phonetics, phonology, etc), but also about how the human mind and the human brain function. In linguistic terms, 'natural language' only applies to a language that has evolved naturally, and the study of natural language primarily involves native (first language) speakers.

The theory of universal grammar proposes that all natural languages have certain underlying rules which constrain the structure of the specific grammar for any given language. Most constructed languages do not obey these constraints, and thus can be clearly distinguished.

While grammarians, writers of dictionaries, and language policy-makers all have a certain influence on the evolution of language, their ability to influence what people think they 'ought' to say is distinct from what people actually say. Natural language applies to the latter, and is thus a 'descriptive' rather than a 'prescriptive' term. Thus non-standard language varieties (such as African American Vernacular English)

are as natural as standard language varieties (such as Standard American English).

International auxiliary languages

It might be suggested that international auxiliary languages such as Interlingua, which have native speakers[1], can be considered natural languages for that reason. A more substantive basis for this designation is that the vocabulary, grammar, and orthography of Interlingua are natural; they have been standardized and presented by a linguistic research body but they predated it and are not themselves considered a product of human invention. Most linguists, however, consider Interlingua to be naturalistic rather than natural. A second naturalistic auxiliary language, Latino Sine Flexione, is also natural in content but has a very small speaking population.

Constructed languages

Besides ethnic languages, constructed languages such as Esperanto that have evolved to the point of having native speakers are by some also considered natural languages. However, for linguistic purposes, Esperanto and other constructed languages, while they are clearly languages, are not considered natural languages. The possible exception to this are true native speakers of such languages. (Proponents contend that there are 200-2000 native speakers of Esperanto.)

Written languages

Written language should be distinguished from natural language. Until recently in the developed world, it was common for many people to be fluent in spoken or signed languages and yet remain illiterate; this is still the case in poor countries today. Furthermore, natural language acquisition during childhood is largely spontaneous, while literacy must usually be intentionally acquired.

Computer science

Natural languages are deemed to be unsuitable for programming languages simply because they have a vast (essentially infinite) vocabulary, complex grammatical rules, and many ambiguities. English and French, for example, take many years to completely master, and this would have been a waste of time when dealing with computing - learning a simple yet efficient embedded language is deemed much easier. Also, any natural language is by its very nature able to express any and all meaning (though it may take a lot of words in some situations), whereas computer languages operate within a much more limited scope.

Various attempts to bring elements of natural language grammar into computer programming have produced programming languages such as HyperTalk, Lingo, AppleScript, SQL and Inform. A program written in these languages resembles pseudocode to some extent, and may roughly be understood by a person without knowledge about the language. However, this approach does not necessarily make editing of the programs easier. The machine interpreters have just as low tolerance to alternative sentence structure, synonyms, etc, as in conventional programming languages.

See also

- Natural language processing (NLP)
- Universal grammar

Notes

1. ^ Panorama in Interlingua, an Interlingua news magazine, sometimes mentions native speakers of the language.

References

- ter Meulen, Alice, 2001, "Logic and Natural Language," in Goble, Lou, ed., *The Blackwell Guide to Philosophical Logic*. Blackwell.

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